

# NATIONAL

## "COLONIAL" AND "STANDARD" GREENHOUSES

CHOICE OF FOUR MODELS



### THE WORLD'S FINEST GREENHOUSES!

Our knowledge of what growers want and need in a greenhouse plus our facilities in the form of purchasing power, modern equipment, experienced personnel and large volume of business, allow us to offer these stock greenhouses at prices far below custom built models. Excellent design, mass production, and pre-assembly guarantee easy erection. A Galvanized Steel Frame and California Redwood Woodwork insure long life. See the pages which follow for a complete description of National's superior greenhouses.

BOOK NUMBER 61

## NATIONAL GREENHOUSE CO., PANA, ILL.

EASTERN OFFICE : 327 CHURCH STREET : NAUGATUCK, CONN.

GREENHOUSES EVERYWHERE — COAST TO COAST AND BORDER TO BORDER



# SPECIFICATIONS

## HERE'S WHAT YOU GET FOR YOUR MONEY!

PLEASE REMEMBER THAT NATIONAL OFFERS YOU FEATURES OF CONSTRUCTION THAT NO ONE ELSE HAS.  
STEEL FRAMED VENTILATORS! — DRIPLESS EAVES! — STEEL WALL SILLS! GET THE FACTS!  
KNOW YOUR HOUSE BEFORE YOU BUY!

### Prices For Complete Framework Include These Things:

#### WOODWORK OF CLEAR REDWOOD

All the Roof Bars, All the Gable Bars, The Roof End Bars, Bars for Glass in Walls, Glazing Bars for All Sash, Door and Frame.

#### STEELWORK—ALL GALVANIZED

All the Posts Required, Purlins for the Roof, Supports for the Purlins, Cross Braces for Supports, Braces to Ridge of House, Ridge, Sash Header, Sash Rest, Eaves—"Y" Type, Wall Sills, Steel Framed Ventilator Sash, Gable Columns and Purlins, Kneebraces as needed. All other metal parts needed will be supplied. These parts are all assembled and with fittings attached as far as practicable.

#### VENTILATOR

You get one 24" deep Continuous Steel Framed Roof Ventilator assembled in six light sections ready to bolt together.

#### VENTILATING MACHINERY

Your choice of our regular rack and pinion or worm and gear elbow arm style operating equipment including all the parts needed for opening and closing the roof ventilator. This equipment is painted with asphalt base aluminum paint for long life.

#### BOLTS

All bolts are galvanized to prevent rust.

#### SCREWS

Wood screws are galvanized too.

#### NAILS

Very few nails are used, but those required will be furnished galvanized.

#### FITTINGS

Galvanized steel or malleable iron. All the fittings needed to make the frame complete and all are galvanized.

#### PAINT FOR TWO COATS

This is our famous white greenhouse paint. Made of Titanium and high quality oils. No finer to be had. Aluminum paint will be supplied on request.

#### GLAZING POINTS

Round  $\frac{3}{4}$  inch No. 15 Galvanized Steel Points. Proven over and over the best of all.

#### PIPE

Shafting for ventilating machinery and for the machine post will be aluminum or steel pipe.

#### RUBBER HEADER CUSHION

Our air tight rubber cushion for the steel header is included.

#### HARDWARE

Galvanized hinges for ventilator and door. A galvanized latch will be furnished for each door.

#### PUTTY

Your choice of Puttirope or Whiting and oil bedding putty for bedding all glass.

#### OIL AND TURPENTINE

You are to supply this for mixing the paint. A small item.

### Prices For The Glass Include All Glass

Our glass is full double thick (about  $\frac{1}{8}$  inch), flat and of standard make. We will supply two sizes of glass. Sizes are 16" x 24" and 16" x 18". Our plans will show where to use them. Odd lights in gable ends and for doors are cut on the job and also the special sizes for roof if required. Glass broken in glazing can often be used for doors and for gables. You will find much less glass cutting to do with our houses as we have planned the building for a minimum of cutting. All other houses require glass cut on the job for all vent sash. No cutting at all for our sash. This saves time and breakage. For 2 light side sash, when used, we supply glass 14" wide to fit sash spacing. Consider this glass cutting when you buy.

"You Always Save on Glazing When You Buy National"

### Prices For The Benches Include Complete Materials

We furnish all the benches of the sizes shown. All the lumber for the benches is Redwood. Side boards are 1" x 6". Bottom boards are 1" x 6" or 1" x 8" or 1" x 10" as will work out best. Legs are 2" x 4" and cut to length. Cross pieces to which the bottom boards are nailed, are 1" x 4". Two cross pieces used with each set of two legs. Cross pieces are spaced about 3 $\frac{1}{2}$  ft. apart, lengthwise of the bench. Steel brackets bent at a right angle are supplied to hold the bench sides in line. Special short, heavy nails with large heads go with the brackets, also all other nails needed. Bench brackets and nails are not galvanized. All lumber is rough so you get full thickness and extra life. Bottom and side boards cut to length on the job. Braces will be supplied of 1" x 4" cypress.

"Remember: Legs and Cross Pieces are Cut and Ready"

### Ground Beds

For Model No. 7 houses we suggest the use of ground beds. These beds are made of Redwood. The side and end boards are 1" x 8" held in place by means of 2" x 4" x 2'-0" long stakes spaced about 3'-0" apart. All lumber is rough and full thickness. Stakes are cut to length and pointed. Nails are supplied.

### Gables

Unless otherwise specified, our price includes one glass gable end with a door. The other end is left open so that the greenhouse can be joined to a service building or store. If you want a second glass gable, with or without a door, see the gable prices on the price list.

### Sidewalls

You have your choice of sidewalls arranged three ways—with fixed glass, 2-light ventilators, or with continuous ventilators. See page 5 for detailed description and sketches.

### Roof Ventilation

Our price includes one continuous steel framed roof ventilator which gives you 20% better ventilation than with 5-light skip-a-light sash. This is ordinarily sufficient for houses up to 30 feet wide. However, if you want two rows of roof ventilators, see page 5 for details of construction and the price sheet for the additional price.

### We Supply Detailed Instructions

A book of instructions will be sent with your plans and will describe the various parts of the work and how best to accomplish it. In addition, we are glad to have you write us at any time and ask questions about anything that you are in doubt about. We are always at your service. We believe our plans and instructions are the best in the business.

### Erection Plans Are Furnished

Complete and detailed plans will be supplied showing every part of the work. We want to help you get a good job of erecting for then you will have a good house. The materials are all partly assembled at the factory and almost every item is cut and fitted ready to put in place. You will find our houses simple and easy to put together and any handy help can do the job and do it well. You save time and money the National way.

### Concrete And Masonry

All concrete and masonry work is to be supplied by the owner as this can always be procured from your local dealer to best advantage, both materials and labor. Bench lumber may be used for any forms required, if you are using benches in the house, or any other building lumber you have about the place. You can do better at home on this work.

### Connected Houses

Two or more "Standard" houses (Models Number 8 and 10) can be joined at the sidewalls in range formation with our Duplex Steel Gutter. If you want to build one house now and join a second house on later, it is necessary that this first house be equipped with gutter on the side where the connection will be made—in which case you may want additional headroom in order to walk from one house to the other under the gutter. This can best be accomplished by raising the wall height. Tell us of your plans, we will be pleased to quote on arrangements of this type.

The "Colonial" houses (Models Number 7 and 11) are designed to be built as separated houses. Space them about eight feet apart for best results. Many prominent growers are now building separated houses as they have found that in houses built this way they get more sunlight, better ventilation, better control of heat and disease and as a result, better plants.

### Items May Be Omitted

If you have materials on hand that you want to use, such as paint, putty, sash operation equipment, or whatever it may be, just tell us about it. You can buy any part of the house from us that you want to buy . . . as much or as little as you wish.

### You Can Make Changes

The four models of greenhouses described in this book were designed to cover most of our customers needs. However, you may want to change a particular model in some respect, such as increasing the height of the sidewalls. It may be too, that you need an entirely different type of house. If you want a greenhouse other than as described in this book, write us and explain your wishes—we will be glad to help in any way we can.

### Longer Houses

Lack of space prevents us from listing houses over 125 feet in length. If you want a house of greater length, please write us so we may quote. We make them in any length desired.

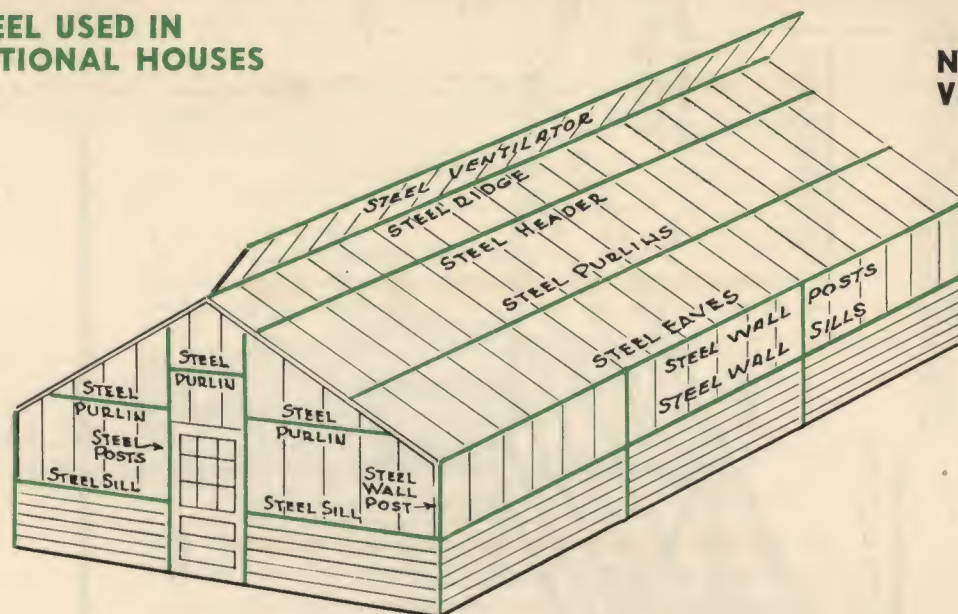
ITEM BY ITEM, FROM THE GROUND TO THE TOP OF THE ROOF,  
YOU'LL FIND NATIONAL HOUSES YEARS AHEAD OF  
THE USUAL KINDS. GET THE FACTS.



## ALL STEEL EXCEPT THE GLAZING BARS AND DOORS!

## STEEL USED IN NATIONAL HOUSES

A steel frame is far superior to one of wood. A small piece of steel takes the place of a big piece of wood, yet increases strength.



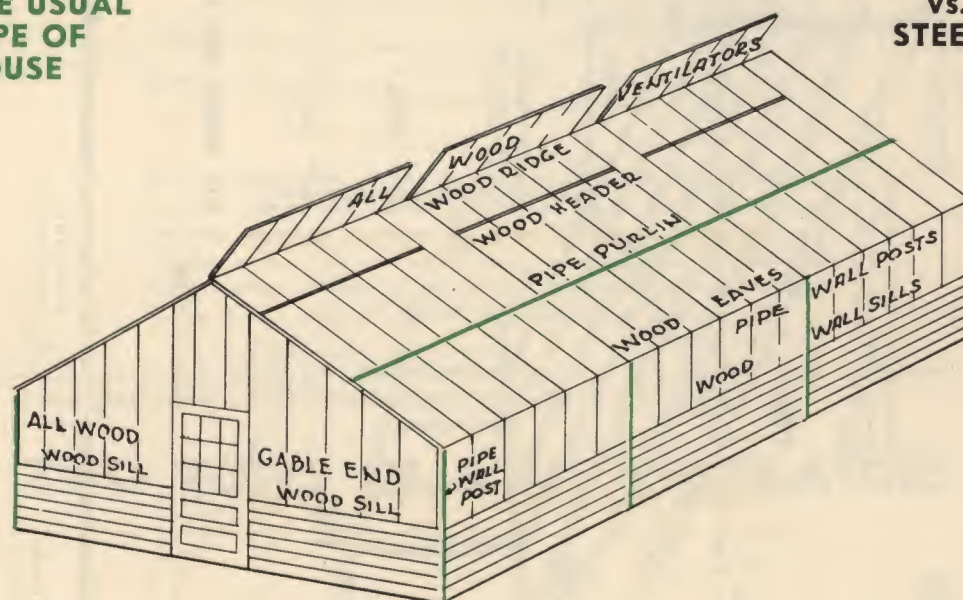
## NOTICE THE VENTILATOR

Every house has steel framed continuous ventilation. All glass full 16" wide and no cutting to do. You get 20% more air!

**Beauty, Light, Strength, Durability, Easy Erecting, Efficiency, Low Upkeep!**

## STEEL USED IN THE USUAL TYPE OF HOUSE

Can you see why anyone would want a house like this? Why burden yourself with a lot of wood to keep painted and repaired? Just see how little of this house is made of steel.



## WOOD vs. STEEL

See the separate wood ventilators which cut down your air, warp out of shape and need repairing frequently. Compare them with our continuous steel framed ventilators.

**Clumsy, Heavy, Weak, Short Lived, Costly to Build, Inefficient, Expensive!**

## STUDY THESE PICTURES---THEY ARE IMPORTANT!

Steel construction means more strength and more sunlight. It means that you have a healthier and cleaner house. You have beauty too. Dirt and filth do not accumulate on steel as it does on wood. Galvanized steel needs no constant painting and repairing. Your house stays put for years and years with a minimum of upkeep expense. The money you save on repairs is actual cash added to your profits. For true economy and for real money making there is no house in the World that can equal a NATIONAL. That is our firm belief! More than forty years of wide experience is behind National construction. When you buy a NATIONAL you will have no regrets afterward.



# AN INSIDE VIEW OF THE FINEST GREENHOUSE IN THE WORLD

## INTRODUCTION

This is an inside view of a Model No. 8, "STANDARD" Greenhouse. The same general construction features are used in the other three models described in this brochure. Keep in mind of course that Models No. 7 and 11 are "COLONIAL" houses.

**FAMOUS NATIONAL STEEL VENTILATORS!**  
Cypress glazing bars framed with galvanized angle iron—each catches its own condensation and it drips out on top of roof—after arm brackets riveted on—no glass to cut—20% more ventilation than with ordinary vents.

**GALVANIZED STEEL HEADER**  
Fastened with screws to top of bars and sash closes down on it. Ice clearing—won't freeze shut—easy to put up.

**SASH REST**  
Galvanized steel rest fits under sash and shuts out all weather.

**GALVANIZED STEEL RIDGE**  
Continuous steel ridges screwed to every roof bar—strong, drips, easy to put up. Bars all spaced for glazing.

**GLASS**  
Width of glass 16 inches, length is 18 inches. Glass in ventilators is 16 x 24".

**RUBBER CUSHION ON HEADER**  
A rubber cushion that fits over sash header. Keeps out the cold—an exclusive feature.

**GALVANIZED ANGLE IRON EAVES**  
For both sides of house—lets the condensation drip fall outdoors—holes are ready punched for roof and side bars.

**GALVANIZED STEEL TOP RAIL**  
Riveted to eave, drilled and ready to hold wall bars securely.

## FITTINGS

Fastened on by us whenever possible to save you money and erection time.

**STEEL SILL**  
Shuts out the wind—easy to bolt on—no need for cement or mortar here, all galvanized.

**WALL**  
May be any sort of masonry, wood, etc.—height according to model.

## EASILY ERECTED

All parts are marked for quick identification. No need for special tools or instructions. Goes up easily and quickly.

**ALL INSIDE DRIP FALLS OUTSIDE**

## POST SPACING

Posts are spaced about 8'-4 1/2" apart lengthwise of the house.

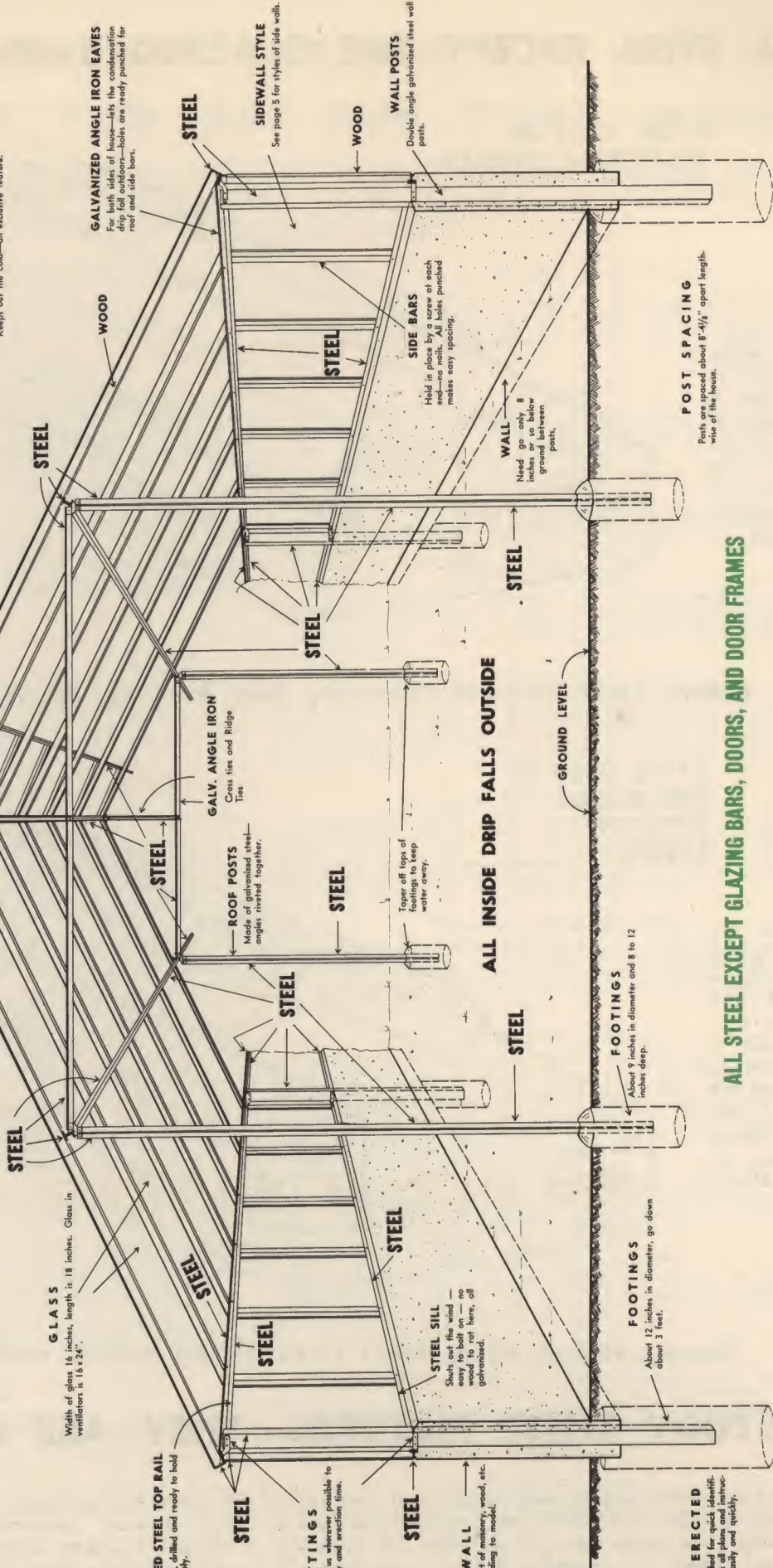
## FOOTINGS

About 9 inches in diameter and 8 to 12 inches deep.

## FOOTINGS

About 12 inches in diameter, go down about 3 feet.

**ALL STEEL EXCEPT GLAZING BARS, DOORS, AND DOOR FRAMES**





## YOUR CHOICE OF THREE STYLES

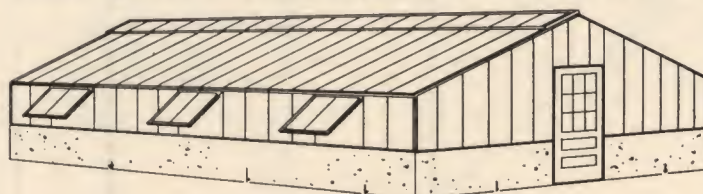
The only difference between the styles is in the design of the side walls. All four models can be arranged for Style A, B, or C side walls as described below. Parts for all styles are in stock, ready to ship on a few hours notice.

### STYLE "A"



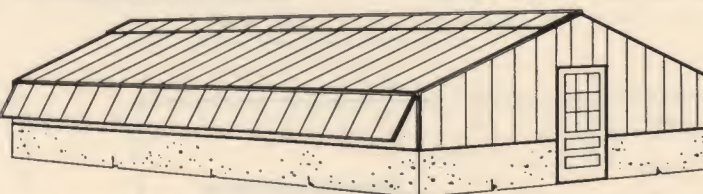
Has fixed glass in each side wall below the eaves and is constructed as shown in Fig. No. 2 at the top of Page 6. See how simple the details are.

### STYLE "B"



Has a combination of fixed glass and movable sash for each side wall below the eaves. For every six rows of glass we furnish one sash which is two rows wide. These sash are operated by hand, each one separately. No operating equipment is included in our price as most people prefer to prop them open. We can supply push rods at a slight additional cost if desired. This style not only gives fine ventilation due to wide opening features, but also affords space for taking things in and out of the house as need may arise. We advise the use of Style "B" walls as the "best buy" of the three styles.

### STYLE "C"



Has a continuous line of sash from end to end of the house. These are the same style of steel framed sash as used on the roof and we supply complete operating machinery for them. Usually we do not advocate this style construction as it always seems to us that the cost of the sash and machinery for them is greater than the benefit derived. However, they do serve a purpose, especially in extremely hot weather.

Prices for Style A, B, and C Side Walls are listed separately on the price list for each model and size greenhouse.

## TWO ROWS OF ROOF VENTILATORS

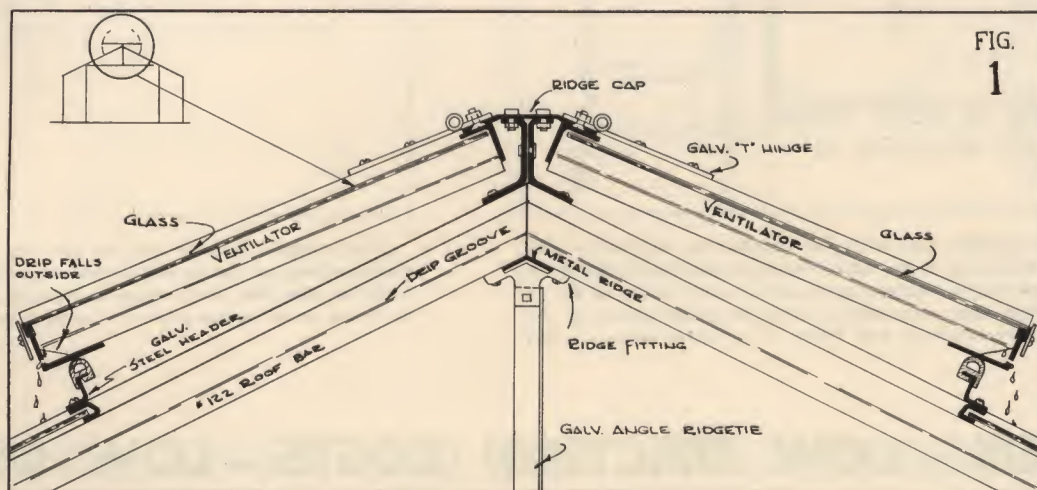
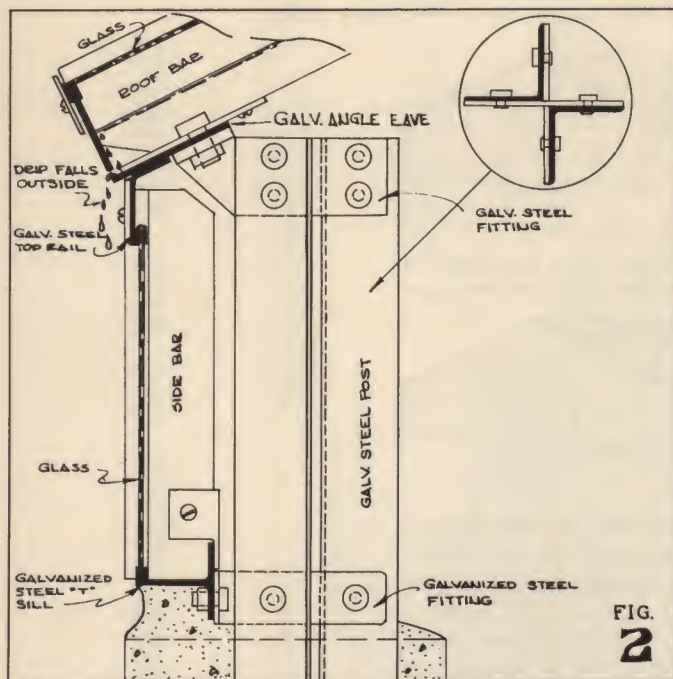


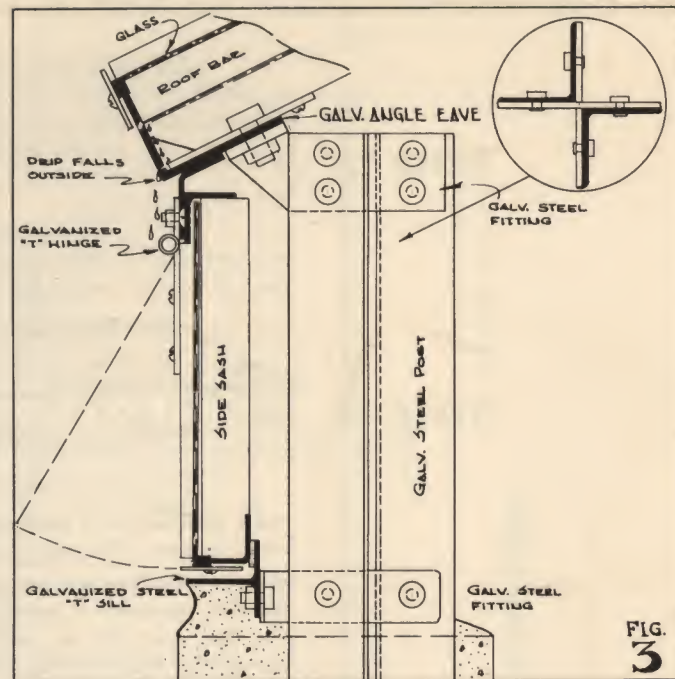
FIG.  
1

The diagram at the left shows the type construction used when there are two rows of roof ventilators at the ridge. Our price for the second ventilator, as shown on the price list, includes the metal cap and fittings, and another run of steel header with rubber cushion, in addition to a second set of sash operating equipment.

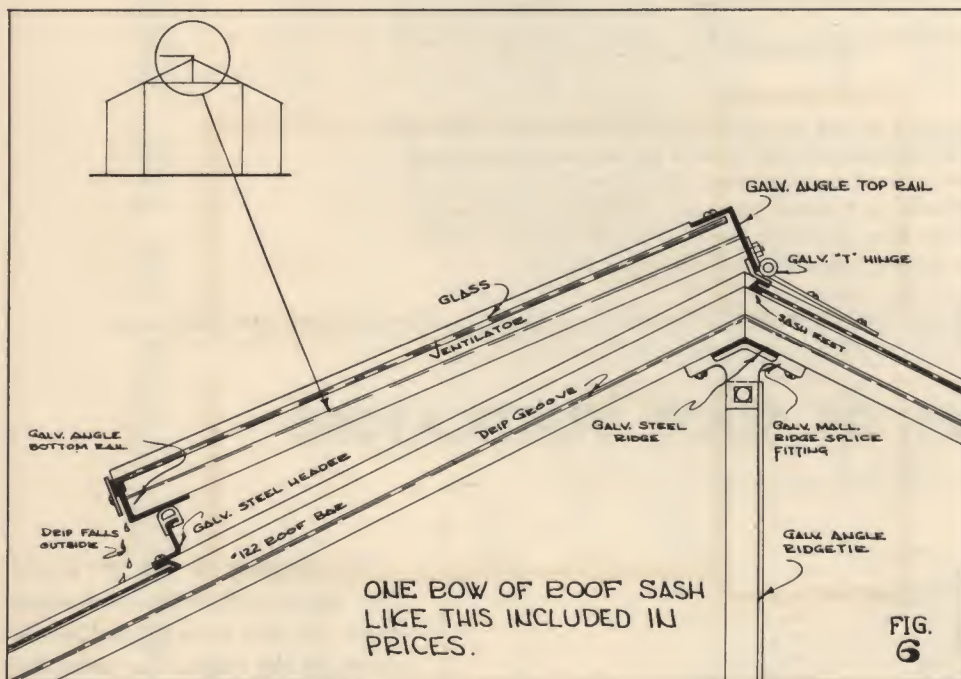


FIG.  
2

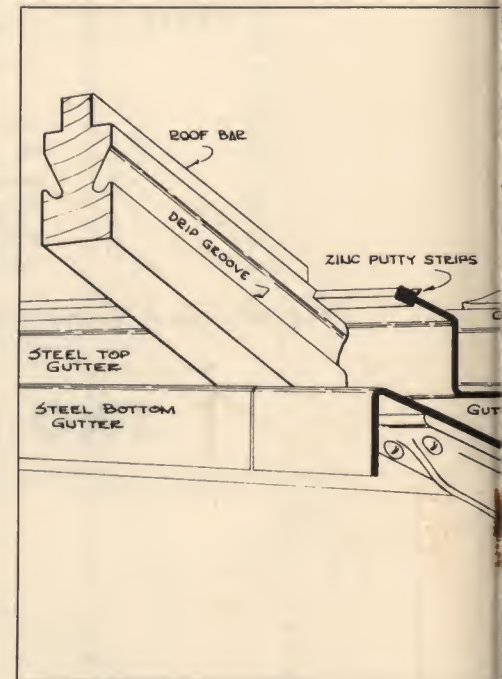
There are but two pieces of wood shown here . . . the side bar and the roof bar. All else is STEEL. Steel sill, steel eave, steel top rail, steel posts with fittings attached by us . . . and ALL THE DRIP FALLS OUTDOORS!

FIG.  
3

The only difference between this sketch and the one to the left is that here you have a movable sash hinged to the steel eave. Notice how the sash has angle iron at the top and bottom. Only the bars are of wood.

FIG.  
6

Our roof ventilators are perhaps the greatest invention ever made for greenhouses. Notice how they are framed with angle iron and how the sash fits over the top of the ridge. Notice too the lower edge of the sash and how the drip is caught in the angle iron and drained outdoors on top of the roof. See the rubber air cushion on the steel header and you will know that it saves many dollars in fuel by stopping leaks at this vital place. Look at the steel ridge. No other greenhouses have such things as are shown here . . . they are exclusive National features.

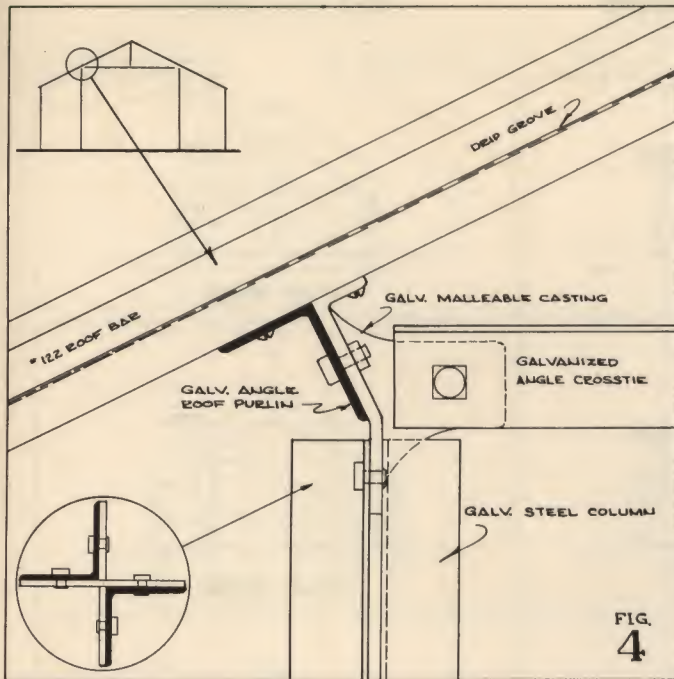


Duplex Steel Gutter as used to join two adjacent manner, advise us and we will be pleased to quote. Along the side later, it is necessary that this first house for prices on the houses you want arranged this way.

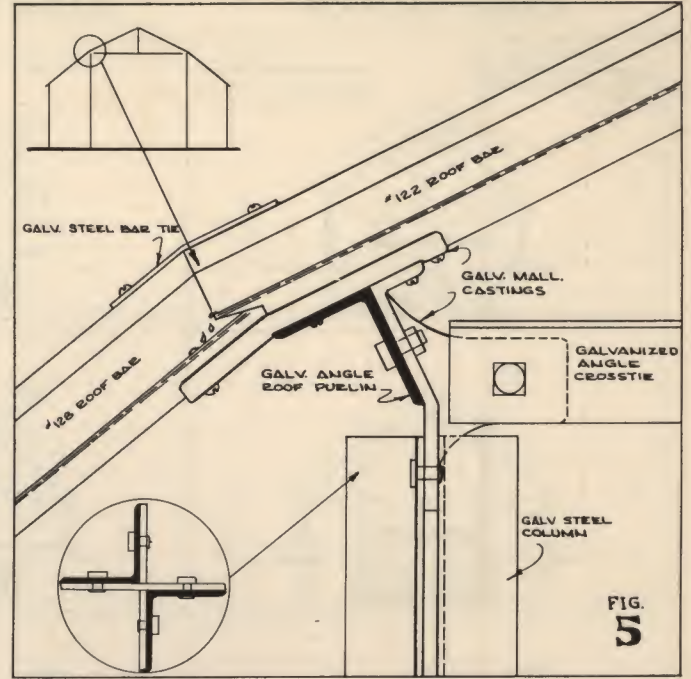
**NOTICE THE STEEL — LOW ERECTION COSTS — LOW OPER**



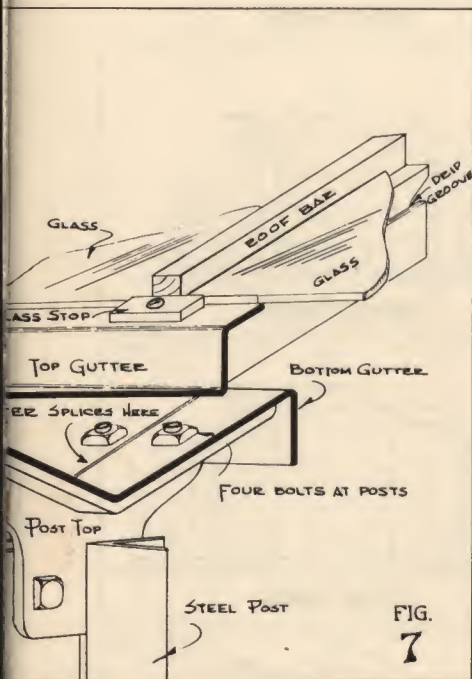
# CONSTRUCTION



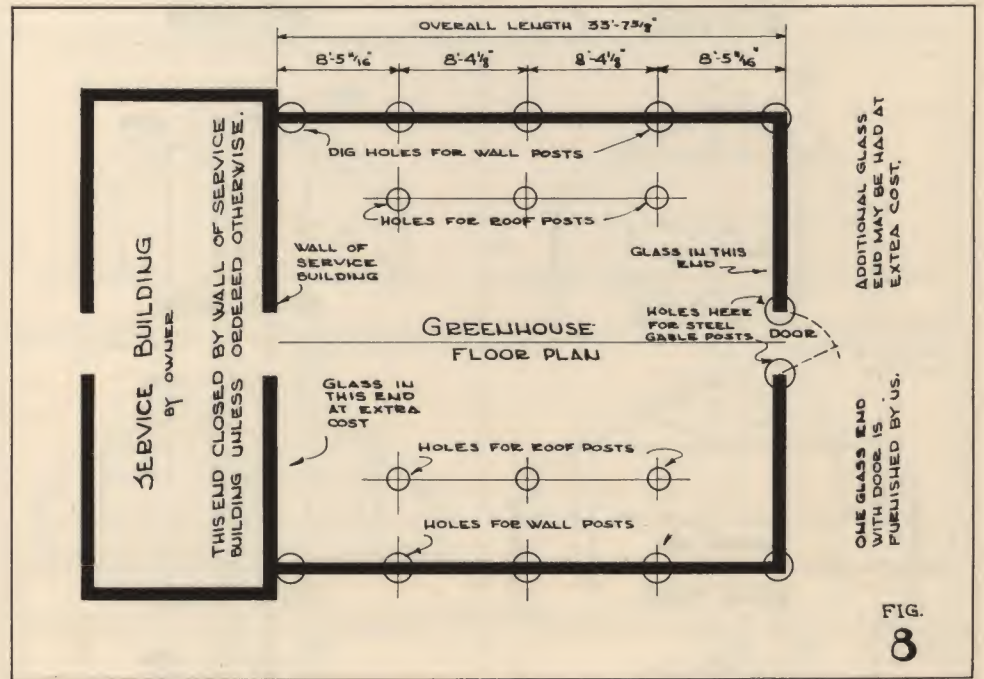
The only wood piece here is the roof bar and all else is steel. The roof posts reach you with fittings riveted on and you just bolt things together. Notice the drip grooves in the roof bars and how the water carries down.



Shows construction at the splice of the roof bar on "COLONIAL" houses. Splice is cut at our factory—all you do is fasten the two pieces of bar together—they fit perfectly—absolutely leak-proof. The only wood piece here is the roof bar and all else is steel.



houses. If you want two houses connected in this way you plan to build one house now and join another one later. It can be equipped with gutter when it is built. Write



A typical floor plan for a house 33'-8" long. Holes for all posts are about 8'-4 1/8" apart, which equals six rows of 16 inch wide glass. We send full instructions for digging the holes as well as for complete erection of the building. All parts are marked for easy erection. Notice that we supply one gable end only unless otherwise specified since most houses are connected to a service building and thus a second gable is not necessary.

**REDUCING COSTS — NO ROT — LESS SHADE — BETTER CROPS**



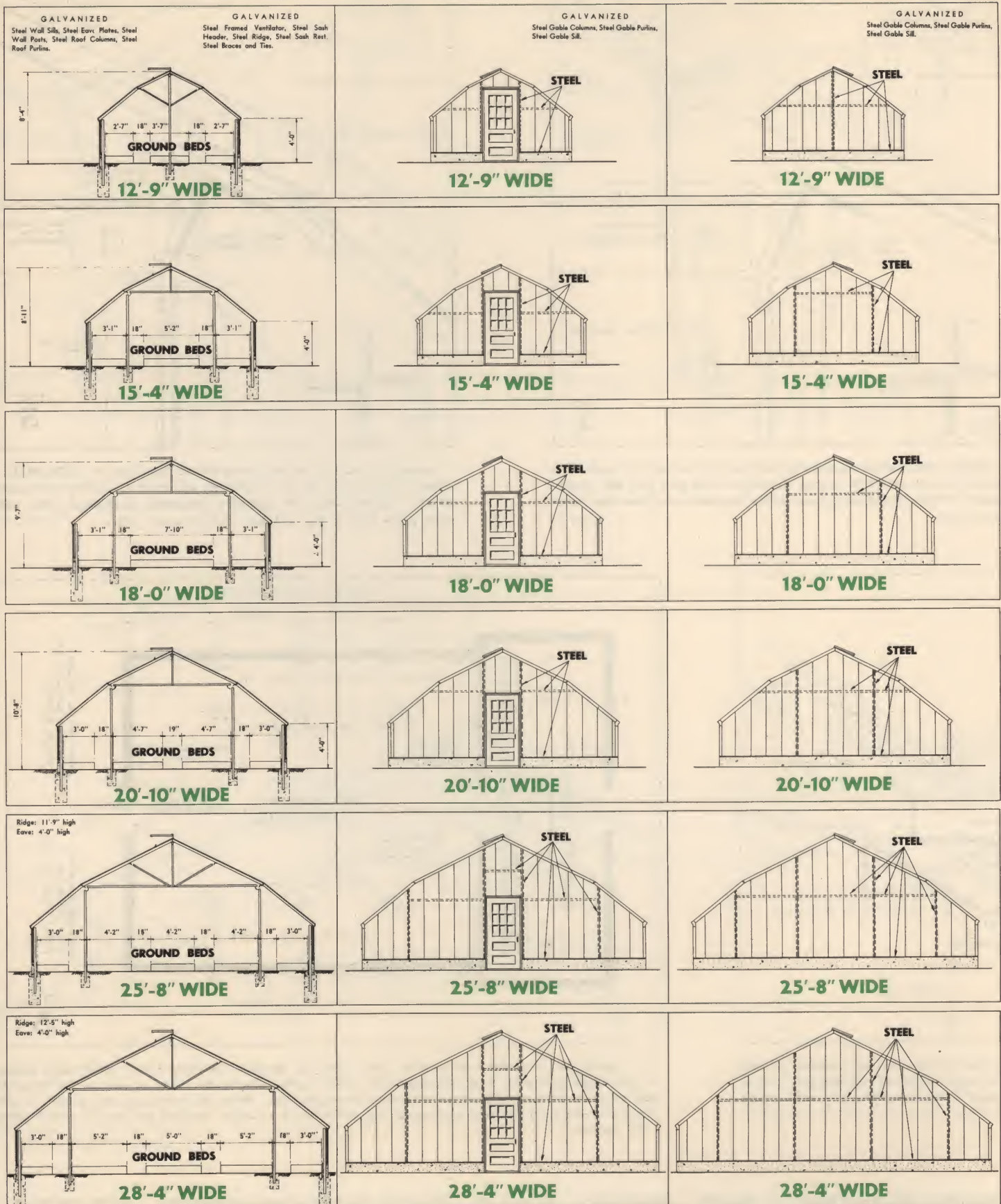
# MODEL NUMBER 7 "COLONIAL" GREENHOUSE

THIS MODEL HAS A 4 FT. HIGH SIDE WALL WITH 3 FT. DEEP SIDE GLASS

## CROSS SECTION

## GABLE WITH DOOR

## PLAIN GABLE



FOR PRICES—SEE THE PRICE LIST ENCLOSED



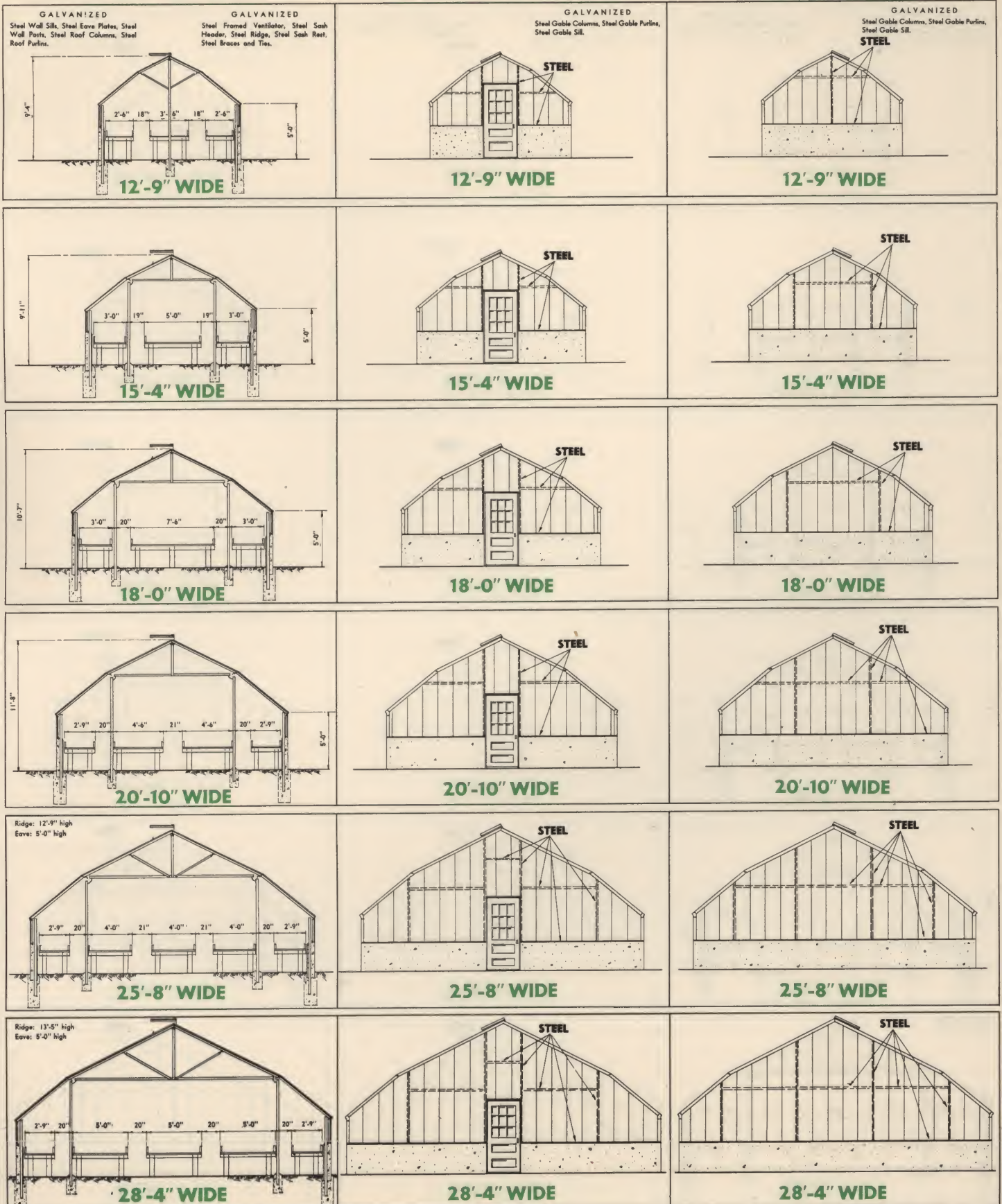
# MODEL NUMBER 11 "COLONIAL" GREENHOUSE

THIS MODEL HAS A 5 FT. HIGH SIDE WALL WITH 2 FT. DEEP SIDE GLASS

## CROSS SECTION

## GABLE WITH DOOR

## PLAIN GABLE



FOR PRICES—SEE THE PRICE LIST ENCLOSED



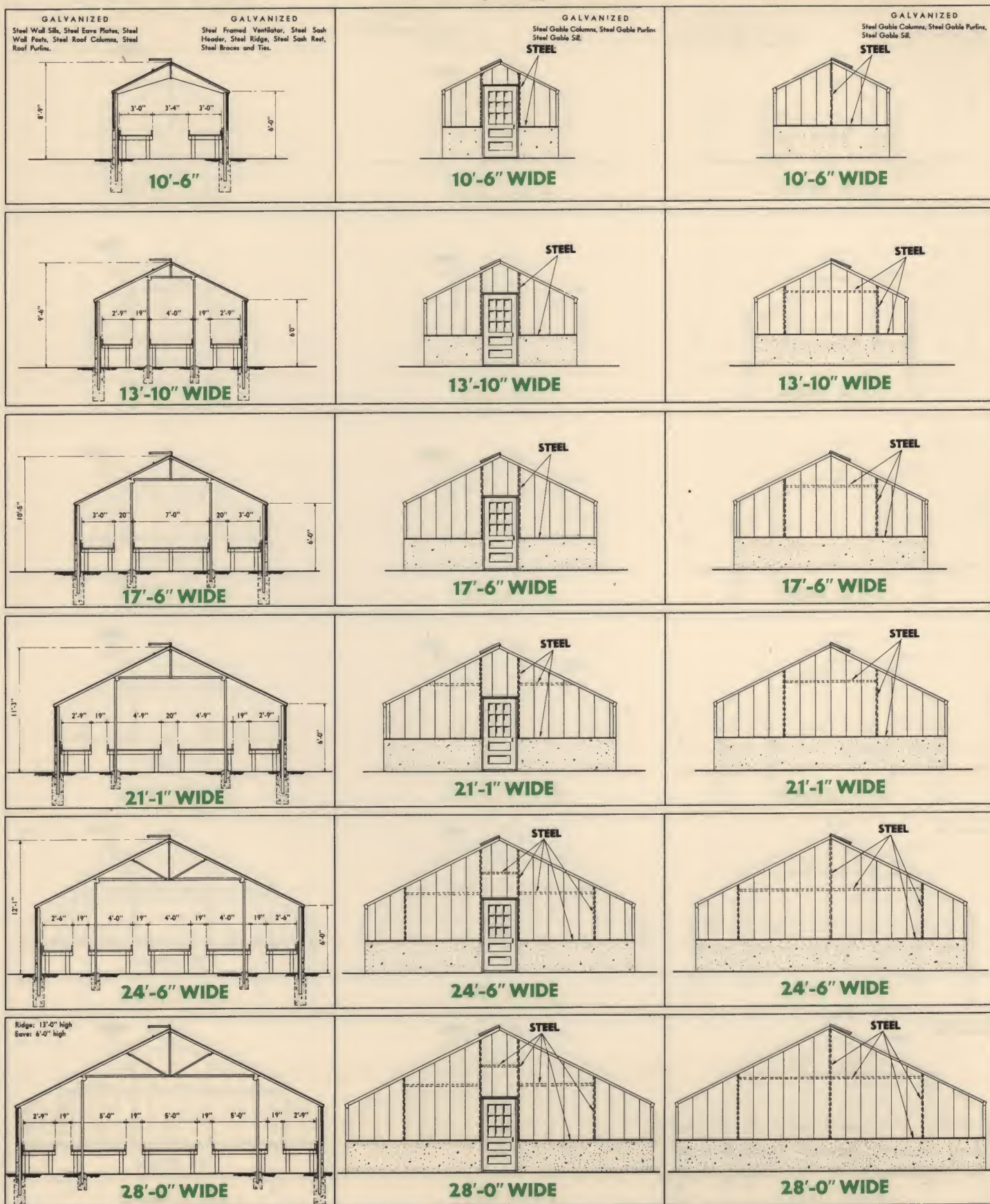
# MODEL NUMBER 8 "STANDARD" GREENHOUSE

THIS MODEL HAS A 6 FT. HIGH SIDE WALL WITH 3 FT. DEEP SIDE GLASS

## CROSS SECTION

## GABLE WITH DOOR

## PLAIN GABLE



FOR PRICES—SEE THE PRICE LIST ENCLOSED



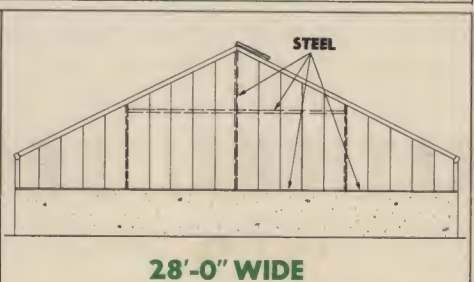
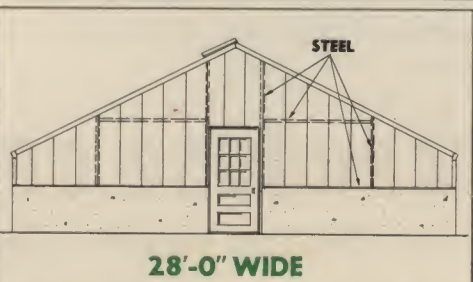
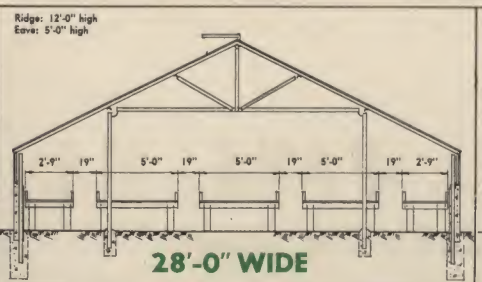
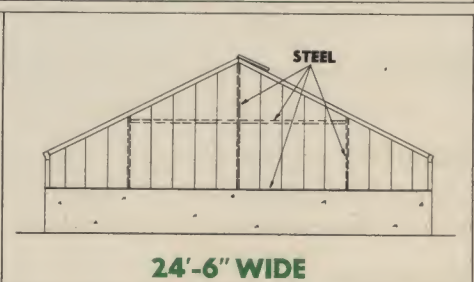
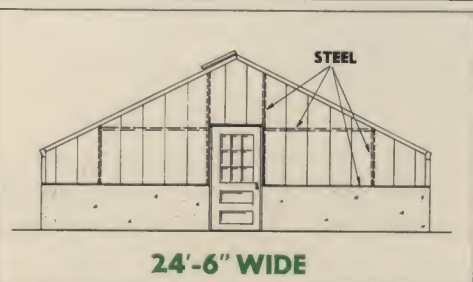
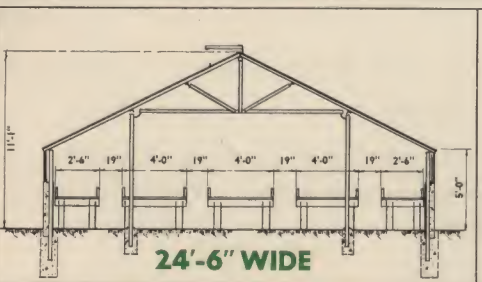
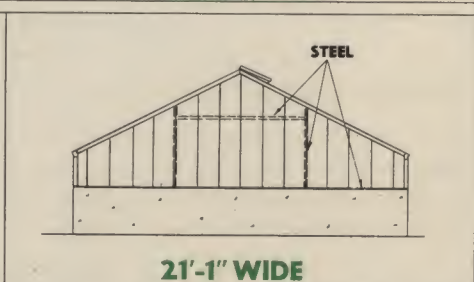
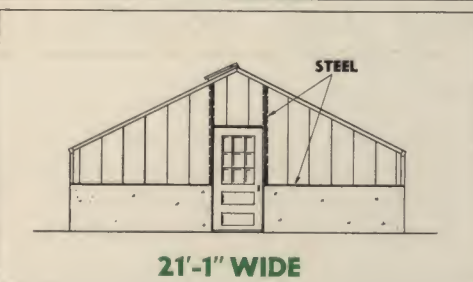
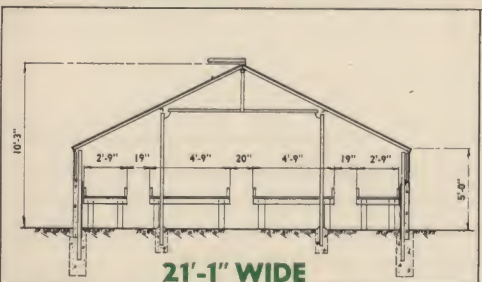
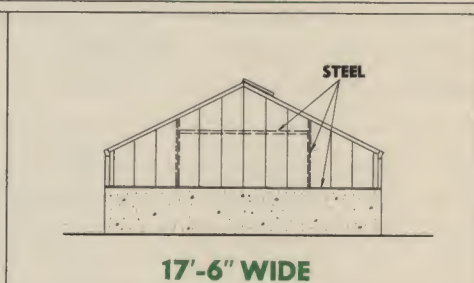
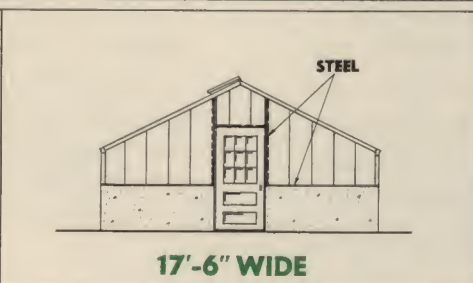
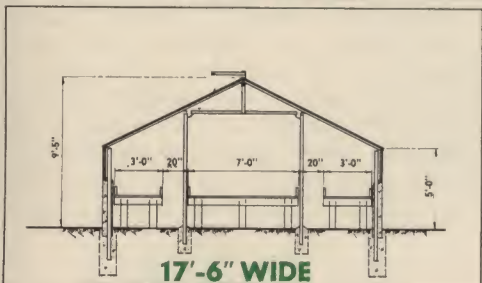
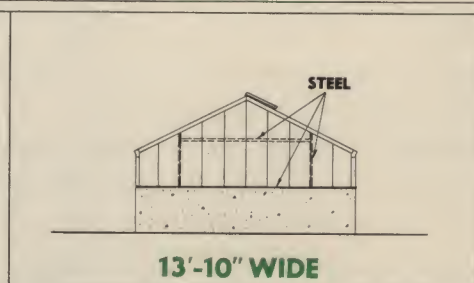
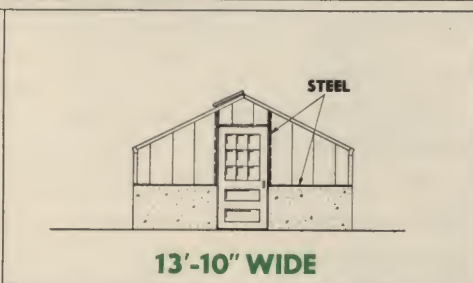
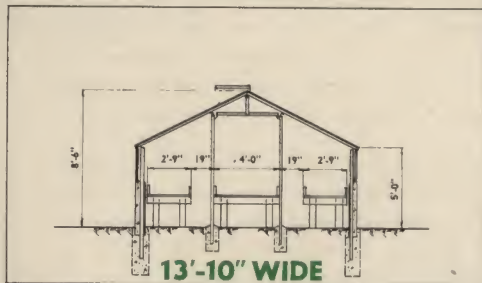
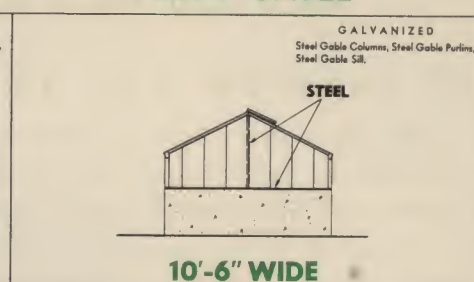
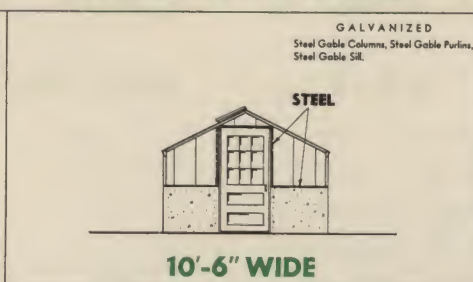
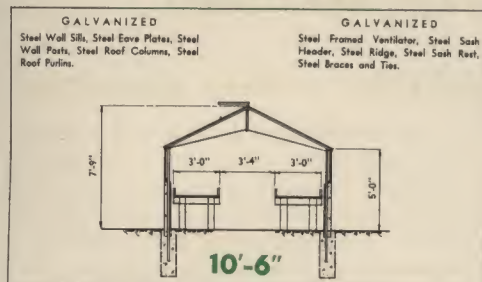
# MODEL NUMBER 10 "STANDARD" GREENHOUSE

THIS MODEL HAS A 5 FT. HIGH SIDE WALL WITH 2 FT. DEEP SIDE GLASS

## CROSS SECTION

## GABLE WITH DOOR

## PLAIN GABLE



FOR PRICES—SEE THE PRICE LIST ENCLOSED



# BUY NATIONAL AND SAVE

ONCE YOU SEE A NATIONAL — YOU WON'T WANT ANY OTHER!

## IT PAYS TO BUY BY MAIL!

The great mail order houses have proven the fact that selling by mail is not as costly as selling by other methods. We found this to be especially true in our line of business. In selling greenhouses we found that customers were far apart . . . one today in Colorado and another tomorrow in Massachusetts . . . and trips by salesmen were expensive. Years ago we sent a salesman to call on everybody and found that he called on an average of 50 growers to get one live prospect! Just imagine how expensive that was! The man who bought had to pay for 49 useless calls. Selling by mail is about 15% cheaper than by salesmen and you get this 15% by getting greater value for your money, or in actual cash savings. In some cases where we formerly sold our products by salesmen, we found the customers had to pay as much as 35% more for his materials than he would have paid if we could have sold him direct by mail. Selling by mail is one economy that has enabled us to sell you these fine houses at the low prices we ask for them.

## MASS PRODUCTION — EASY ERECTION

All stock model National Greenhouses are manufactured on new, modern machinery using mass production methods. Made to accurate specifications by means of templates, jigs, and fixtures and with many small parts built in at our factory. These accurate manufacturing methods allow a better job of erecting as mistakes are eliminated. It means quicker erecting too as you have fewer parts to put up. Everything is cut to fit perfectly and all holes are drilled in the steelwork to accommodate bolts and screws. Glass to be cut is at a minimum. Everything is done for your convenience and ease in erection.

The methods described above allow us to replace many wood members with steel. This means a stronger yet lighter building with upkeep and repair almost entirely eliminated. Only the glazing bars, doors, and door frames are wood and these are made of genuine California Redwood, "The Wood Eternal". There is much greater freedom from disease, rot, and decay. You get more sunlight because the steel supports are not nearly as large as wood normally used. More sunlight means stronger and better plants. More sunlight means less heat required to maintain proper growing temperatures. All these features add up to quality and our statement, "Once You See A National House—You Won't Want Any Other."

## TERMS AND CONDITIONS

**TERMS:** Net Cash with order—to all alike.

We have always figured that bad debts, cost of keeping books, cost of looking up credit, writing letters and other office expenses for collecting and keeping track of bills, cost the buyer at least 5% of the sale. Where goods are sold on monthly payments this cost is considerably greater, going up to as much as 15%. These savings are all passed on to you when you buy for cash. Most any firm will give you a discount for cash, which proves what we say, that cash dealing makes lower prices. In making our CASH PRICES we have allowed, on an average, 6% discount. You either get this in actual cash saving or you get it in a finer and more valuable building.

**PRICES:** All prices are F.O.B. Pana, Illinois. You pay the shipping charges at your local freight station on receipt of the goods. You are thus assured of paying for the exact shipping charges—and no more.

**SERVICE:** We are 5 minutes away from 4 large railroads—Baltimore & Ohio, Chicago & Eastern Illinois, Illinois Central, and New York Central. Hayes Freight Line and Yellow Transit trucks make daily stops at our plant. When your house is ready there will be no delay in getting it in the hands of a transportation company.

**SHIPMENT:** Ordinarily most orders can be filled within two weeks time. During some slow periods of the year the length of time required for shipment may be reduced and during busy periods the full two weeks may be required. If you need your house in a hurry, advise us, we will help you all we can.

# NATIONAL GREENHOUSE CO., PANA, ILL.

EASTERN OFFICE : 327 CHURCH STREET : NAUGATUCK, CONN.

GREENHOUSES EVERYWHERE — COAST TO COAST AND BORDER TO BORDER



# BUY NATIONAL AND SAVE

ONCE YOU SEE A NATIONAL — YOU WON'T WANT ANY OTHER!

## IT PAYS TO BUY BY MAIL!

The great mail order houses have proven the fact that selling by mail is not as costly as selling by other methods. We found this to be especially true in our line of business. In selling greenhouses we found that cus-

tomers  
another  
salesmen  
to call  
average  
imagine  
had to  
15% ch  
by getti  
cash sa  
our pro  
to pay  
would h  
Selling  
sell you

## TERMS

V  
office ex  
monthly  
when yo  
lower pr  
cash sav

## PRICES

the good

## SERVIC

tral, and  
is ready

## SHIPM

of time required for shipment may be reduced and during busy periods the full two weeks may be required. If you need your house in a hurry, advise us, we will help you all we can.

## MASS PRODUCTION — EASY ERECTION

All stock model National Greenhouses are manufactured on new, modern machinery using mass production methods. Made to accurate specifications by means of templates, jigs, and fixtures and with many small parts built in at our factory. These accurate manufacturing

akes are  
ou have  
perfectly  
nmodate  
nimum.  
ease in

replace  
stronger  
most en  
and door  
ine Cali  
is much  
You get  
ot nearly  
it means  
eans less  
eratures.  
atement,  
t Want

nd other  
e sold on  
n to you  
g makes  
n actual

ceipt of

ois Cen  
ur house

ne length

Digitized by:



ASSOCIATION FOR PRESERVATION TECHNOLOGY

[www.apti.org](http://www.apti.org)

For the

BUILDING TECHNOLOGY HERITAGE LIBRARY

<https://archive.org/details/buildingtechnologyheritagelibrary>

From the collection of:



SOUTHEASTERN ARCHITECTURAL ARCHIVE  
SPECIAL COLLECTIONS  
HOWARD-TILTON MEMORIAL LIBRARY

<http://seaa.tulane.edu>

# NATIONAL GREENHOUSE CO., PANA, ILL.

EASTERN OFFICE : 327 CHURCH STREET : NAUGATUCK, CONN.

GREENHOUSES EVERYWHERE — COAST TO COAST AND BORDER TO BORDER